News story: Government plans £80 million smart ticketing rail revolution

The government has this week set out details of its £80 million programme to introduce smart ticketing across England and Wales by the end of 2018.

Transport Secretary Chris Grayling said:

> Passengers across the country want smart ticketing and this government will deliver it.
>
> This significant investment will ensure that passengers across the network can use mobile phones, bar codes and smart cards across almost all of the network by the end of next year.

The £80 million investment will ensure:

- every passenger will have the choice of travelling without a paper ticket by the end of 2018
- mobile barcode ticketing will be rolled-out on every rail franchise in Great Britain
- passengers will be able to have smart cards hosted on their mobile phone – like a digital travel card – with a pilot of this technology expected in the next 4 months

The Department for Transport is also working on plans with the Rail Delivery Group to bring forward the next generation of ticketing systems to give passengers more tailored options to pay for their travel, saving them money and offering better value deals.

The investment will quickly deliver benefits to passengers across the country. Discussions with train companies about the introduction of mobile phone smart cards are at an advanced stage, with deals soon to be reached with 3 operators. This will mean that both mobile phone smart cards and mobile barcode tickets will soon be accepted by every operator in England and Wales and be interoperable across different franchises.

In addition, pay-as-you-go travel is being rolled-out extensively across the rail network, including with the introduction of KeyGo – a contactless travel card – by Govia Thameslink Railway. The KeyGo system allows passengers to use their card to tap in and tap out across virtually the entire Thameslink, Southern and Great Northern networks, from Cambridge to Brighton, and automatically be charged the most appropriate fare for their journey. Other train operators are soon to follow, with tests happening shortly on South Western Railway, c2c and Greater Anglia.

Press release: Vital renovation for sea wall at Walton on the Naze

The sea wall at Walton on the Naze helps to protect a wetland site of designated international importance under the Ramsar Convention.

The repair work will ensure the wall remains an effective flood defence for years to come and prevent any further deterioration.

Starting later this month, a section of the tidal defence embankment will be refurbished over a 3 month period. The project will see the renovation of a 1.7 kilometre stretch of the embankment, running north up the coast from Foundry Lane.

The work is being carried out by civil engineering contractors Breheny and will take place on the crest and seaward sides of the embankment.

Work is due to begin in the week commencing 9 October 2017 and normal working hours will be from 7:30am to 5pm, Monday to Friday.

Kerry Bentley, Asset Performance Officer for the Environment Agency, said:

> This is very important work and will ensure the sea wall can continue to provide an effective level of protection in the area for years to come.
>
> The damaged sections of existing sea wall will be removed and new sections will be added.
>
> The old blocks will be placed at the toe of the sea wall as habitat and to help reduce wave impact.
>
> In order to ensure the safe delivery of these works we will need to redirect short sections of the footpath to the rear of the wall.

Press release: Dstl reports on space weather

Every day this week, Dstl will be posting a ‘Space Weather Forecast’ on social media to increase awareness of how weather in space can impact us on

Earth.

The Met Office Space Weather Operations Centre (MOSWOC) continuously monitors space weather in order to assess the risk to us on Earth. The Space Weather forecasters from the MOSWOC, in conjunction with scientists at Dstl, research the impact of space weather such as solar flares, coronal mass ejections (CMEs), geomagnetic storms and changes in our ionosphere.

Space weather describes disturbances in Earth's upper atmosphere and magnetic field which have a variety of impacts on mankind and our technology.

The major impacts of a severe space weather event can be divided into 2 areas: impacts on technology on Earth; and threats to equipment and health in space and at high altitude.

These could potentially include:

- Power grid outages
- Disruption to Global Navigation Satellite Systems (GNSS) / Global Positioning Satellites (GPS)
- High Frequency (HF) radio communications outages
- Satellite damage
- Increased radiation levels at high altitude

Thankfully, severe space weather events are rare but when they do occur the impacts to our national infrastructure are extremely significant.

Space weather events have always occurred, but our modern reliance on technology driven systems makes us more susceptible to the impacts.

Different systems are exposed to varying levels of risk depending on technical design, location and the type of space weather that can affect them. The challenge for scientists is to ensure new systems are designed with appropriate engineering solutions to minimize the risk posed by space weather.

Dstl Space Weather specialists have stated that:

> Monitoring space weather is fundamental to ensuring that our defence systems and national infrastructure remain secure. Part of the work we undertake is to collaborate with international scientists and the Met Office to ensure that we assess and learn from space weather and the impact it may have on the Earth.

> This week at Dstl, we will be sending out weather reports supplied by the Met Office to raise awareness and also to encourage young people to get interested in this area of work.

Space Weather Programme Manager at the Met Office, Catherine Burnett, said:

> The services we deliver today, together with our plans for future products and services, are underpinned by an in-house science team who work with many partners across government and academia, including colleagues at Dstl. This way we ensure the very best scientific understanding is used to help the UK prepare for and mitigate against the potential impacts of space weather.

Check out @dstlmod for twitter updates on Space Weather, with thanks to the Met Office for the information.

News story: F-35 Lightning fighter aircraft one step closer as RAF Marham runway intersection resurfacing completed

The work forms part of a £250 million DIO programme, which is part of the major investment by the Ministry of Defence to ready the station for the arrival of the Royal Navy and Royal Air Force's new F-35 Lightning fast jet aircraft.

Construction of this kind on an active air field required a 'no fly' period to be agreed with the station. In the 3 weeks that flying was halted, DIO's contractors, a joint venture between Galliford Try and Lagan Construction, had to complete the entire construction of this element of works. The resurfacing forms the third of 9 phases of work on the project, which will also provide hangars for 12 aircraft and an air crew feeding facility.

This phase included removing more than 13,000 tonnes of existing asphalt and installing 23 pits and 1.2km of ducting for aeronautical ground lighting. To resurface the runway, more than 18,000 tonnes of asphalt were laid over an area of nearly 38,000 square metres, equivalent to more than 5 rugby pitches. To achieve this within the required timescale the contractors worked in multiple shifts, 7 days a week.

Rob Dawson, DIO Lightning principal project manager, said:

> This was a crucial part of the works being undertaken by DIO and was a vast amount to complete in such a short space of time. It couldn't have been achieved without the cooperation of the teams from DIO, our contractors, the Galliford Try and Lagan Construction joint venture, our consultants AECOM and RAF Marham. It has been an integrated team effort and fills me with confidence for the hard

> work ahead of us.

Despite the short space of time available to design, plan and complete the work as well as some poor weather, it was completed a day early. This allowed flying operations to recommence on Friday 29 September.

Wing Commander Phil Marr, Officer Commanding Operations Wing, RAF Marham, said:

> This was an immense task to complete in three weeks. With both runways out of action, any failure to deliver within the prescribed timeframe would have directly impacted flying operations at RAF Marham. This added significant pressure to an already taught construction task. In light of this, it was highly impressive to have been handed back such an immaculate new runway intersection, allowing the Station to recommence flying activities ahead of schedule. An excellent achievement all round.

Group Captain Ann Gibson, Lightning Basing Team Leader, RAF Marham said:

> I am delighted that all of the teams have risen to the challenge to deliver the intersection in a 3 week period thereby minimising disruption to Tornado and RAF Marham operations.

Notes to editors

The F-35B Lightning II is the world's most advanced, fifth generation aircraft that the Royal Air Force and Royal Navy will jointly operate from both land and sea. It will form an integral part of the UK's carrier strike capability from both Queen Elizabeth Class aircraft carriers.

News story: Accelerator Innovation Network Event: Future Aviation Security Solutions

Suppliers attending the event will be able to hear presentations about the finding explosives hidden in electrical items themed competition which seeks to make a real difference in aviation security through innovative science and technology.

If you cannot attend the event, you can attend our webinar which will be

announced shortly.

The competition is looking for proposals for technologies to improve our ability to prevent explosives hidden within electrical items in hand luggage from being taken on board an aircraft.

This Accelerator competition is part of the wider Department for Transport and Home Office Future Aviation Security Solutions (FASS) programme. This programme will invest £25.5 million over a 5 year period (2016-2021) to promote innovation and deliver a step change in aviation security.

As part of an effective, efficient and passenger-friendly screening system we're seeking new solutions that could provide an alternative to imposing bans on electrical items or additional laborious screening measures.

Through this competition we want to continue to improve our detection capability, reduce the risk of restrictive measures being imposed in the future and reduce the need for additional layers of security.

The challenges of this Accelerator competition are to enhance the detection of threats hidden in electrical items at:

- Challenge 1: central search
- Challenge 2: at a final departure screening point, where there are significant constraints on size, weight, power and portability

For both challenges, we're not just looking for solutions to detect concealed explosive devices/components. We'd also be interested in solutions to identify electrical items that may have been tampered with, or which appear to be out of the ordinary. This could allow us to focus the more resource intensive detection techniques on a smaller number of items.

Up to £3 million is available for this themed competition.